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SUMMARY OF THE 1981 CAMPGROUND RECEIPT STUDY(U) ARMY  
ENGINEER WATERWAYS EXPERIMENT STATION VICKSBURG MS  
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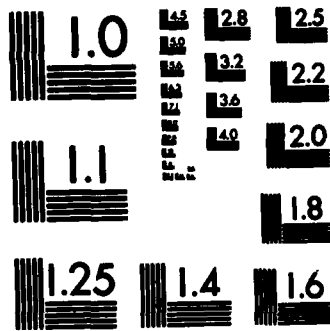
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# SUMMARY OF THE 1981 CAMPGROUND RECEIPT STUDY

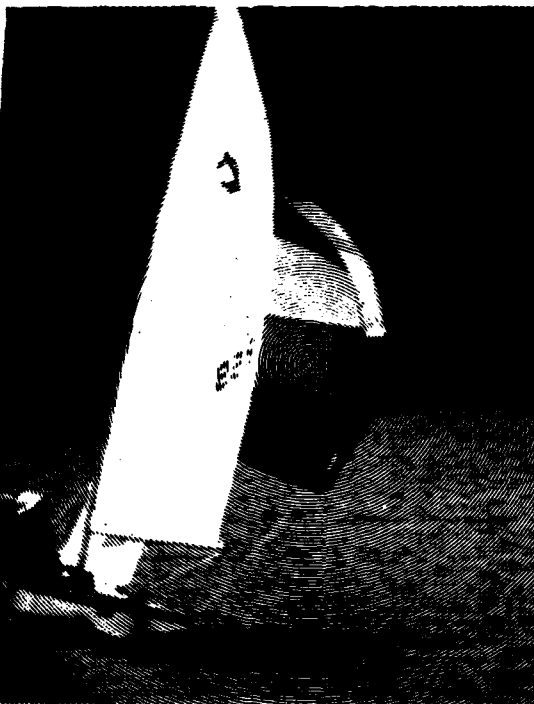
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P. O. Box 631, Vicksburg, Miss. 39180

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OCTOBER 1982

FINAL REPORT

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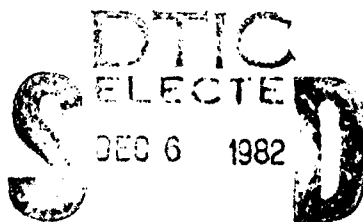
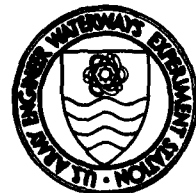
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Prepared for

Office, Chief of Engineers, U. S. Army  
Washington, D. C. 20314



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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report describes the collection and summarization of the 1981 (cal- endar year) Campground Receipt Study (CRS) data. These data represent the first complete year of data collection and as such are the best available sam- ple of descriptive characteristics of visitors at Corps fee campgrounds nationwide.  Data collection include visitor characteristics (e.g. length of stay and group size), vehicle type, and camping and other recreation equipment used. (Continued)		

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20. ABSTRACT (Continued).

These data are summarized for the 15 participating projects as well as for the total sample (119,929 fee permits). Potential uses of the data are also illustrated including analyses of visitor origins, campsite and facility (i.e. electrical hookup) usage, and trends.

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## PREFACE

This report summarizes the results of the 1981 (calendar year) Campground Receipt Study. This was the first complete year of data collection for this program of monitoring trends of visitor characteristics at Corps of Engineers fee campgrounds.

The authors of this report were Messers. Gregory L. Curtis and William J. Hansen, Resource Analysis Group (RAG), Environmental Resources Division (ERD), Environmental Laboratory (EL), U. S. Army Engineer Waterways Experiment Station (WES), Vicksburg, Miss. Mr. Curtis was on temporary assignment under the terms of an Intergovernmental Personnel Act agreement between WES and Michigan State University, East Lansing, Mich. Mr. Hansen was the Group Leader of the RAG. Mr. R. Scott Jackson was Leader of the Recreation Research Team. Dr. Adolph J. Anderson was the Program Manager of the Recreation Research Program. The study was under the supervision of Dr. Conrad J. Kirby, Chief, ERD, and the general supervision of Dr. John Harrison, Chief, EL.

COL Tilford C. Creel, CE, was the Commander and Director of WES during this study. Mr. F.R. Brown was the Technical Director.

This report should be cited as follows:

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## CONTENTS

	<u>Page</u>
PREFACE . . . . .	1
PART I: INTRODUCTION . . . . .	3
Purpose . . . . .	3
Background . . . . .	3
PART II: DATA ANALYSES . . . . .	6
Data Summary . . . . .	6
Other Recreational Equipment . . . . .	8
Trend Analysis . . . . .	8
Special Field Applications . . . . .	10
PART III: REVISIONS FOR 1982 . . . . .	15
PART IV: SUMMARY . . . . .	17
TABLES 1-4	
APPENDIX A: EXAMPLE OF A RECREATION ANALYSIS PROGRAM (RAP) "PROJECT REPORT" . . . . .	A1
APPENDIX B: EXAMPLE OF A RECREATION ANALYSIS PROGRAM (RAP) "SITE SPECIFIC DATA REPORT". . . . .	B1
APPENDIX C: RECREATION AREA AND PROJECT DATA SUMMARIES FOR THE 1981 CAMPGROUND RECEIPT STUDY . . . . .	C1
APPENDIX D: RECREATION ANALYSIS PROGRAM BY COUNTY (RAPCO) FOR ONE RECREATION AREA. . . . .	D1

## SUMMARY OF THE 1981 CAMPGROUND RECEIPT STUDY

### PART I: INTRODUCTION

#### Purpose

1. The first full year of data collection for the Campground Receipt Study (CRS) has been completed and the results are summarized herein. The purpose and development of the CRS is described in Curtis et al. (1982),\* and therefore will not be presented in this report. The focus of this report is threefold: to present a summary of the total CRS sample, to present some special applications of the CRS data available for field use, and to identify changes and improvements made in the CRS for the calendar year 1982 data collection.

#### Background



2. In calendar years (CY) 1979 and 1980, campers at CRS projects were registered using the Standard User Permit (ENG Form 4457) with a supplemental CRS form used to record visitor characteristics. In order to simplify the data collection and improve its reliability, the 1981 CRS data were collected on a new form. The data collected using this form included all the accounting information needed from ENG Form 4457, plus the additional visitor data (e.g. point of origin, number in party, length of stay, and information concerning the type(s) of equipment being used by the visitor) from the supplemental form. This revised form was designated as ENG Form 4457 (TEST) (see Figure 1).

3. There are three primary advantages gained by using the new form. First, since this form is an accountable form, its use is mandatory, which increases its reliability. Second, the card columns are numbered, which makes the form more efficient for keypunching (an

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\* Curtis, G. L., et al. 1982. "Development and Evaluation of the Campground Receipt Study," Miscellaneous Paper R-82-2, U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Miss.



		U.S. ARMY—CORPS OF ENGINEERS				SERIAL NUMBER <b>SAMPLE</b>	
<b>USER PERMIT</b>							
DISTRICT 1 2		PROJECT 1 4 5 6 7		REC AREA 8 9 10		SITE NUMBER 11 12 13	
NAME OF CAMPER (OPTIONAL)		NO. OF PEOPLE IN PARTY 14 15		PRIOR VISITS Y N 16 17		PRIMARY DESTINATION Y N 18 19	
CAR LICENSE STATE NUMBER		ZIP CODE 20 21 22 23 24		DATE ARRIVED MO DAY YR 25 26 27 28		EXPECTED DEPARTURE MO DAY 29 30 31 32	
TOTAL NIGHTS PD. 33 34		PRIMARY VEHICLE 35 <input type="checkbox"/> CAR 36 <input type="checkbox"/> TRUCK 37 <input type="checkbox"/> VAN 38 <input type="checkbox"/> OTHER 39 <input type="checkbox"/> 4 WHEEL DRIVE VEHICLE		EQUIPMENT (CAMPING) 40 <input type="checkbox"/> TENT 41 <input type="checkbox"/> POP-UP TRAILER 42 <input type="checkbox"/> PICKUP CAMPER 43 <input type="checkbox"/> TRAVEL TRAILER 44 <input type="checkbox"/> MOTORHOME (INCLUDES CONVERTED BUSES)		EQUIPMENT (NONCAMPING) 45 <input type="checkbox"/> POWERBOAT 46 <input type="checkbox"/> SAILBOAT 47 <input type="checkbox"/> BOAT TRAILER 48 <input type="checkbox"/> BICYCLE 49 <input type="checkbox"/> MOTORCYCLE 50 <input type="checkbox"/> ORV (NONMOTORCYCLE) 51 <input type="checkbox"/> OTHER	
GOLDEN AGE PASSPORT NO. 32		TOTAL FEE PAID \$ 33 34 35 36		ATTENDANT			

ENG FORM 4457(TEST), Mar 81 **FISCAL** (Proponent: DAEN-CWO-R)

Figure 1. ENG Form 4457 (TEST)

additional copy of the receipt is also provided so that keypunching the data will not interfere with the other uses of the form). Third, less time is needed for the attendants and/or park rangers to collect and code the information required.

4. During the CY 81 fee season, the new test form was used to register fee campers at the 15 Recreation Research and Demonstration Units with fee campgrounds (see Figure 2). A total of 120,204 fee receipts were collected at the 73 fee campgrounds located at these projects. The CRS sample represents approximately 12 percent of the total number of fee areas within the Corps.

5. As the forms were completed, they were sent to the responsible District office for keypunching. The keypunched data were then transmitted to the U. S. Army Engineer Waterways Experiment Station (WES) for analyses. The Recreation Analysis Program (RAP)\* was used to tabulate

\* A FORTRAN program that was developed at WES for the Campground Receipt Study. Copies of the program were also provided to the participating Districts so they could summarize their data.

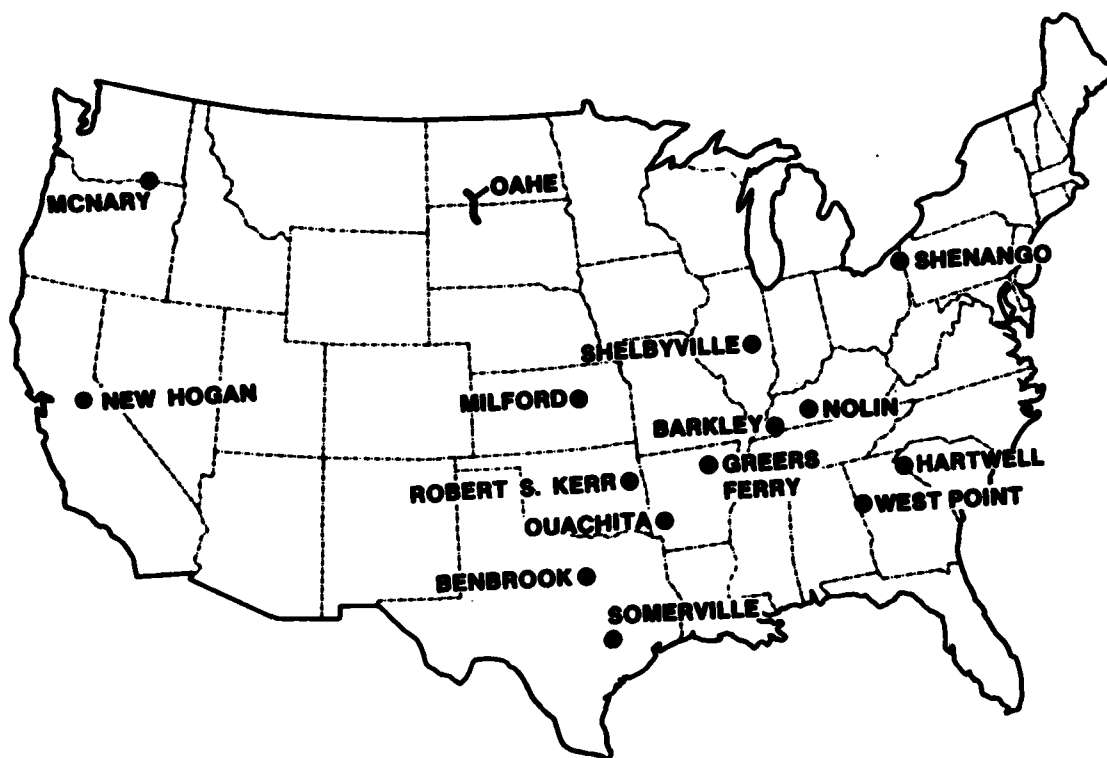


Figure 2. Campground Receipt Study project locations

the CRS data. Two types of tabulation are generated by RAP. The first is entitled "Project Report," which analyzes all the CRS variables for each recreation area within a given project (see Appendix A). The second is entitled "Site Specific Data Report," which analyzes the same variables within each recreation area but does so by campsite (see Appendix B). The presentations of descriptive statistics included herein are based on these tabulations.

## PART II: DATA ANALYSES

### Data Summary

6. Data from CY 81 are summarized in the following paragraphs for each of the projects in the CRS as well as for the entire sample. Therefore, comparisons can be made between projects, as well as comparisons between the individual projects and the total sample.

7. General user characteristics (average length of stay, average group size, percentage of prior visits, percentage of primary destination, and percentage of Golden Age/Access\* Passports) are presented in Table 1. The average length of stay per permit for the CRS total was 2.05 days with a range of 1.55 to 2.48 for individual projects. Similarly, the average group size for the CRS total was 3.60 persons with a range of 2.87 to 4.17 persons at individual projects. Similar comparisons can be made for the other elements in Table 1.

8. The distribution of vehicle types used by groups in the CRS is presented in Table 2. The percentages in Table 2 are not the percentages of total vehicles but rather the percentages of total permits for which a particular vehicle type was recorded as present. In CY 81 the total number of vehicles was not recorded, only the presence of one or more vehicle types. For example, if a group had two cars, the vehicle type "car" would have been checked. If a group had two cars and a pickup truck, a check under car and a check under truck were to have been recorded. The percentages in Table 2 may not therefore sum to 100 percent\*\* (in addition some permits may not have had any vehicle type checked because of recorder error). Overall, the most frequently noted vehicle types were cars (37.2 percent) and pickup trucks (40.6 percent). These two vehicle types were noted over three times as often as vans

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\* Two types of passports are available: those for persons over the age of 62 (Golden Age) and those for handicapped persons (Golden Access). These passports allow a 50-percent discount on use fees.

\*\* Changes in recording procedures to overcome these problems during CY 82 are discussed in Part III.

(9.5 percent) and motorhomes (12.7 percent). There is, however, substantial variation at individual projects. Groups which had cars present ranged from 23.1 to 50.8 percent and trucks ranged from 27.7 to 66.1 percent. Motorhome was checked on approximately 25 percent of the permits at two projects, while vans never exceeded 12.8 percent.

9. A summary of camping equipment used by CRS visitors is presented in Table 3 (as well as the percentage of groups with a powerboat). The same recording procedure used with vehicle type (presence or absence of a given type) was also used with camping equipment. These percentages may likewise not sum to 100 percent.

10. Tents (33.8 percent) were the most prevalent type of camping equipment recorded, ranging from 13.5 to 60.0 percent at individual projects. Travel trailers (25.4 percent) were second and varied at the projects from 7.1 to 42.7 percent. The least prevalent type of camping equipment was the pop-up camper (9.9 percent). At individual projects, it ranged from 1.8 to 16.0 percent.

11. Additional information about the CRS projects can be obtained by comparing data from Tables 1-3. For example, McNary L&D and Lake Oahe had (Table 2) the highest percentages of motorhomes (25.6 and 25.2 percent, respectively) of all the CRS projects. Both of these projects also had (Table 1) the lowest percentages of prior visit (52.6 and 67.9 percent), near lowest percentages of primary destination (61.9 and 85.0 percent), and near lowest average length of stay (1.55 and 1.76 nights). The data from Table 1 indicate that a high percentage of the campers at the two projects were in transit to other destinations. Comparing the data between Tables 1 and 2 also implies a correlation between these in-transit visitors and the use of motorhomes. Further analysis of the data (e.g. making a RAP run for these two projects using only those permits with a no response to primary destination) is necessary to confirm the validity of this correlation.

12. Another item of interest (Table 3) is the extremely low percentage of fee campers at McNary L&D with powerboats (2.6 percent). Again, this may be partially explained by the high percentage of in-transit users, inasmuch as they may more likely be on extended travel

trips and less likely to be towing a powerboat. In addition, McNary had the third highest percentage (Table 3) of travel trailers (a deterrent to towing a powerboat) and the highest percentage (Table 1) of permits noting Golden Age/Access Passports (indicative of a potentially more sedentary visitor). Again, further analysis is necessary to confirm these relationships, but this is illustrative of the types of cause-and-effect relationships that can be investigated with the CRS data.

#### Other Recreational Equipment

13. Information was also recorded on several noncamping recreational equipment categories (see Figure 1). Only powerboats have been summarized in this section. The other equipment types have not been included because of the relatively low percentages they represent. These data are, however, included in Appendix C, which is a tabulation of all the data for CY 81 for each recreation area and project within the CRS.

#### Trend Analysis

14. One of the primary reasons for initiating the CRS was to develop a valid and reliable data base to monitor visitor trends. Although data are only available from two consecutive years and no definitive trends can presently be drawn, an example is presented to illustrate the types of analyses that will be possible in the future. Data summaries from a Lake Shelbyville campground, Forrest W. "Bo" Wood, are used in this example.

15. The distribution of vehicles used by visitors at Forrest W. "Bo" Wood are shown in Figure 3 for 1980 and 1981. A decline has occurred at the campground in the percentage of both cars and pickup trucks, while an increase has been recorded in the percentage use of motorhomes (from 14.8 to 19.1 percent).

16. Similar comparisons can be made for camping equipment used at this campground (Figure 4). Travel trailers make up nearly half of the

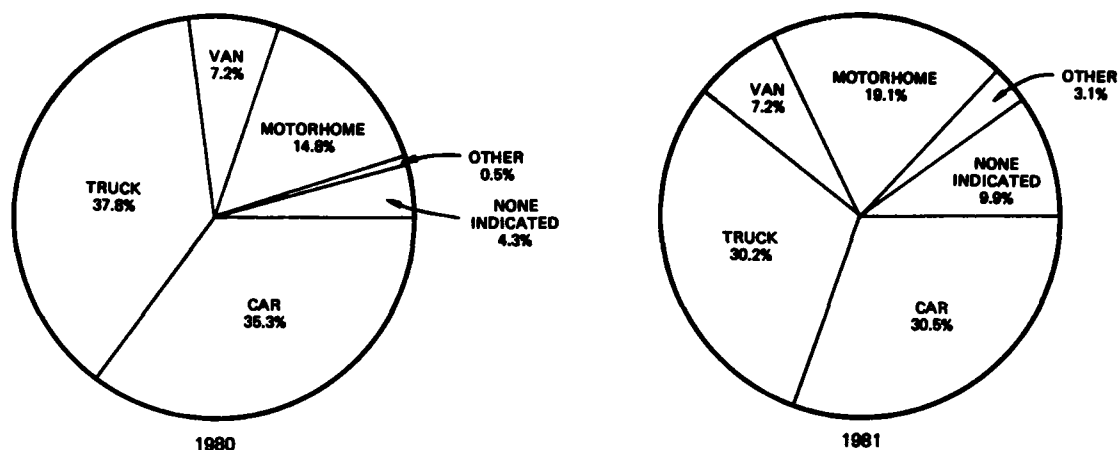


Figure 3. Distribution of vehicles for 2 years at Forrest W. "Bo" Wood Recreation Area, Lake Shelbyville

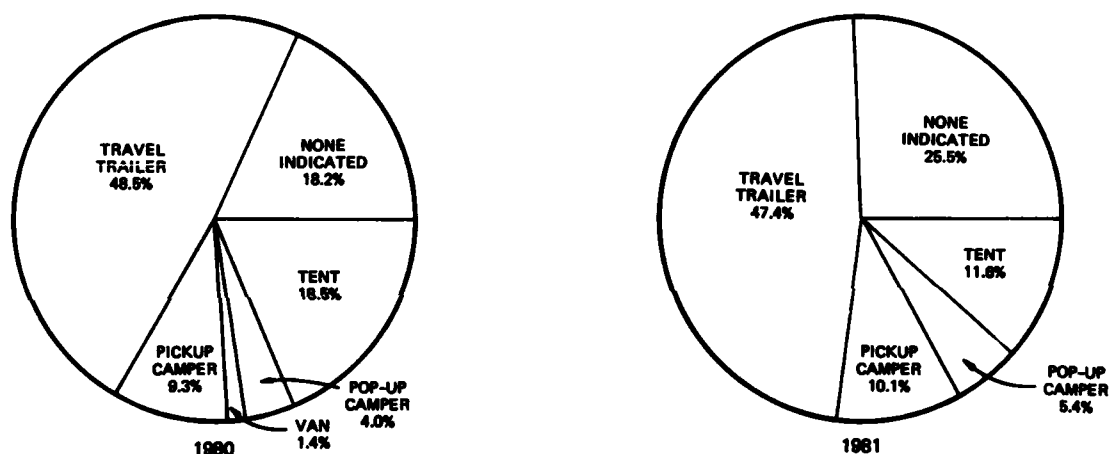


Figure 4. Distribution of camping equipment for 2 years at Forrest W. "Bo" Wood Recreation Area, Lake Shelbyville

equipment used during both years. The distribution of travel trailers, pickup campers, and pop-up campers shows little change in percentages over these 2 years. Tent distribution does, however, show a decline from 18.5 to 11.6 percent.

17. The changes seen in the vehicles and camping equipment described above could be indicating a shift from the use of tents to motorhomes. Although firm conclusions cannot be drawn from the data collected to date, this does illustrate a trend that could be easily monitored through continued use of the CRS.

### Special Field Applications

18. The CRS data base has many applications beyond its main purpose of identifying visitor use patterns and characteristics and examining how they change over time. Presented here are three applications which show how the CRS data base may be useful to managers and planners: visitor origin analysis, campsite use analysis, and electrical hookup use.

#### Visitor origin analysis

19. The CRS data can be used to identify the market areas of projects or recreation areas. A Recreation Analysis Program by County (RAPCO) has been prepared which summarizes the information on the fee receipt by county (or groups of counties) of origin. RAPCO matches the zip code on the fee receipt with a subfile constructed from U. S. Postal Service information to tabulate the visitor characteristics by county of origin. A sample RAPCO report is provided as Appendix D.

20. Summarizing the visitor characteristics by area of origin has many potential applications. To date it has been used primarily to analyze travel patterns to existing areas. An example is presented from data collected from the fee campgrounds at Milford Lake, a Corps project in northeast Kansas. The RAPCO report was used to tabulate 1981 visitation to each of the Milford Lake areas from counties within 50 road miles\* of the area, from counties 51-100 road miles, and visitation from areas beyond 100 road miles.\*\* Results of these tabulations are summarized in Table 4.

21. Some obvious differences in travel patterns to the five areas are illustrated in Table 4. For example, over 60 percent of the use at Curtis Creek area comes from counties within 50 miles of the area. Of this total, over 95 percent comes from two counties, Saline and Dickinson, southwest of the area. Curtis Creek is located on the southwest portion of the lake and is one of the closest areas to these two

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\* To convert miles to kilometres, multiply by 1.6.

\*\* Distances were calculated from the city with the largest population in each county.

counties. Obviously, Curtis Creek is used extensively by local residents.

22. The area with the greatest percentage of use from outside the 100-mile boundary is Rolling Hills (46.2 percent). The campground is closest to Interstate Highway 70, located just south of Milford Lake. This makes it most accessible to long distance travelers. The smallest percentages of visitors noting prior visits to Milford, or that Milford was their primary destination, were recorded at Rolling Hills. These responses indicate that the area supports a large amount of in-transit campers.

23. Also of interest is the distribution of visitor origins for Timber Creek. Over 77 percent of the 1981 Timber Creek visitation originated from counties within 100 miles of the area, with almost 55 percent originating from counties between 51 and 100 miles of the area. More interesting than the percent distribution is the participation (5.8 recreation days per 1000 persons) from the 51- to 100-mile range. The low participation rate from counties within 50 miles of Timber Creek results from the fact that the two most populous counties within this zone are located even closer to Curtis Creek and other areas at Milford than Timber Creek. Almost 50 percent of the use from the 51- to 100-mile zone at Timber Creek originated from four counties directly north of Milford in Kansas and Nebraska. The high participation rate from these counties might indicate an absence of competing (substitute) sites in this area, but further evaluation would be needed to confirm this hypothesis.

#### Campsite use analysis

24. Another use of the CRS data is individual campsite use analysis. The amount and characteristics of use that occurs at individual campsites can be determined from the CRS data using the RAP "Site Specific Data Report" (Appendix B). Factors that influence site selection can then be analyzed by comparing the level of use and user characteristics at individual sites with site attributes (e.g. resource characteristics such as shade, facilities provided, or proximity to resources or facilities). Data from Narrows Park, a campground at Greers Ferry Lake



in north-central Arkansas, is used to illustrate this analysis.

25. The level of use and location of all campsites at Narrows Park is presented in Figure 5. Overall, campsites within "Loop D" received the lowest level of use; in general, these sites are located furthest from the lake. Of the 13 sites that were occupied more than 125 days, five (sites C13-C17) are located along the lakeshore. These five lakeshore sites have the best water access when slope is considered. The remaining lakeshore sites are potentially less attractive because of the steepness of slopes between the campsites and water. Four other sites (B3-B6) in the highest range of use are located in a group away from the lake in a level, wooded area. In addition to being well shaded and flat, these sites are the closest to potable water and appear to have more space available than most other sites in the park.

26. The two campsites with the greatest reported use during the 1981 CRS are B3 (194 days) and C14 (178 days). At B3, 67.3 percent of the users had travel trailers and 8.2 percent had motorhomes, while at C14 the percentages were 23.6 and 58.3, respectively. Overall, at the Narrows Park campground, 44.9 of the parties had travel trailers and 22.3 percent had motorhomes, and for the total CRS sample the percentages were 25.3 and 12.6 percent, respectively. These data indicate some differences in site preferences based on the type of camping equipment used by the visitor. Further investigation of site differences in resources, facilities, and campsite designs is necessary to determine the basis for these differences in visitor preferences.\*

#### Electrical hookup use

27. At the end of the 1981 CRS, Greers Ferry Lake staff were considering providing additional electrical hookups at campsites within their campgrounds. Before proceeding, however, they were interested in determining the rate of use of existing hookups, and wanted to know if

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\* Such an investigation was initiated in FY 82 as part of the WES Recreation Research and Demonstration System Work Unit. Results of this investigation will be combined with the CRS data to provide key indicators of recreation impacts and trends and will be reported at a later date.

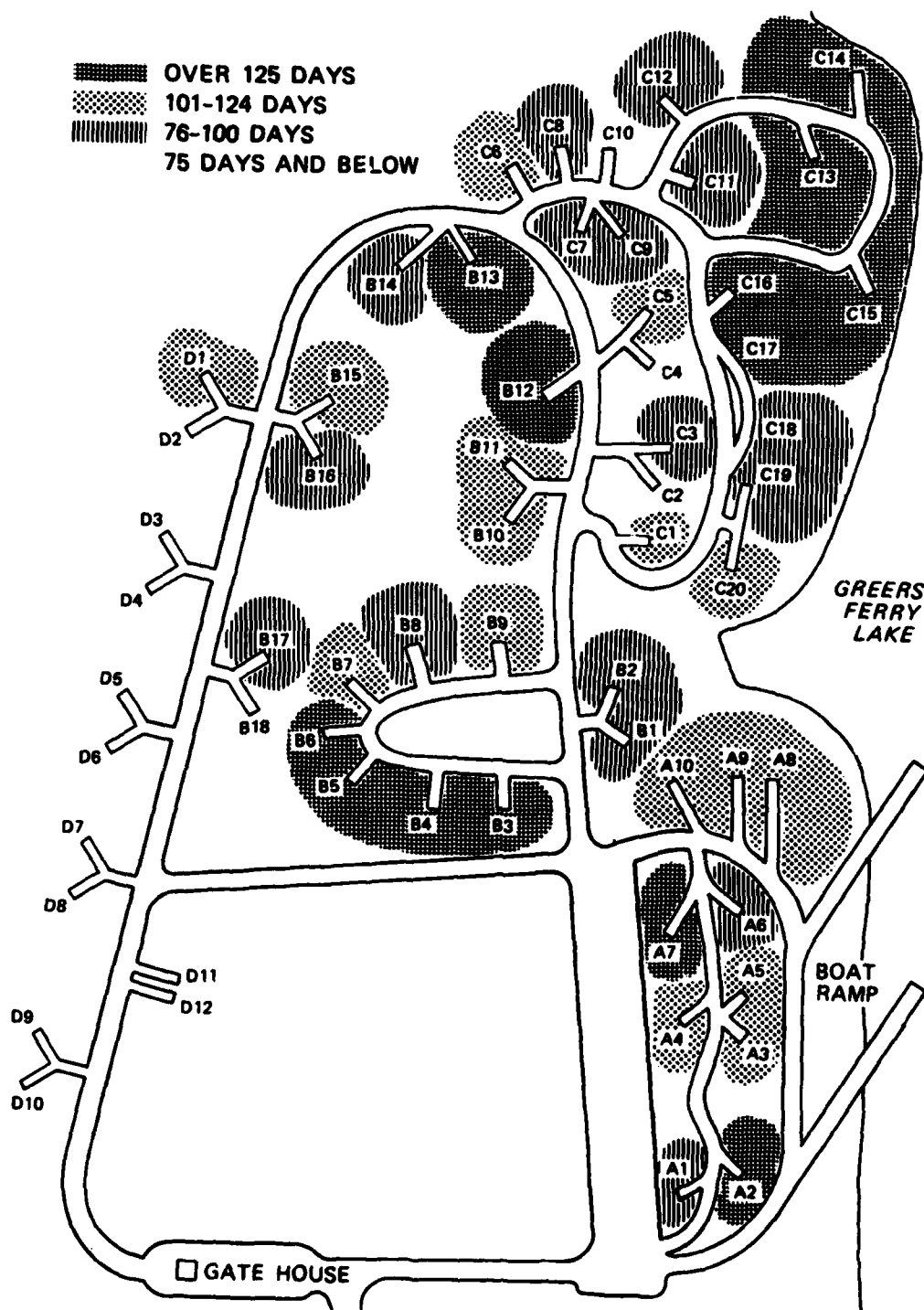


Figure 5. Distribution of days occupied for campsites at Narrows Park, Greers Ferry Lake

the CRS data could help answer this question. Although the usage of electrical hookups was not specifically recorded on the 4457 TEST Form, it could be determined by making separate RAP "Site Specific Data Reports" for users with and without Golden Age/Access Passports and determining the average nightly fee paid.

28. Electrical hookups are provided at campsites within three campgrounds at Greers Ferry Lake. During the 1981 CRS, the occupancy rates for the campsites with electrical hookups within these three campgrounds were 26.6, 47.7, and 83.2 percent. On the days the sites were occupied, the usage of electrical hookups was 77.7, 89.0, and 72.8 percent.

29. When looking at electrical hookup usage by user type, those groups without a Golden Age/Access Passport used the electrical hookups at the rates of 67.9, 84.5, and 45.9 percent at the three campgrounds. On the other hand, groups registering with a Golden Age/Access Passport used electrical hookups 98.4, 96.5, and 100.0 percent of the time. In addition, at the campsites with electrical hookups in these three campgrounds, groups registering with Golden Age/Access Passports comprised 32.3, 37.0, and 42.7 percent of all groups. This compares with 16.2 percent for all CRS groups at Greers Ferry Lake and 16.7 percent for the total CRS sample. Again, characteristics of users, which can be determined from the CRS data, had an obvious effect on their preferences for facilities provided.


30. The purpose of this discussion has been to illustrate one of the ways the CRS data can be used beyond that which it was designed for (i.e. answering specific field needs). In the future when project personnel have specific research questions, the CRS data may be employed in a similar manner and become a useful management tool. In this particular examination of the CRS data, it was possible to estimate not only the total utilization of electrical hookups at the campgrounds, but also to get some insight into the use patterns of different types of users (i.e. Golden Age/Access) that would be attracted to them. This should enable managers to identify possible conflicts that may result from certain actions before they occur and to take steps to minimize these conflicts.

### PART III: REVISIONS FOR 1982

31. Based on the experience gained during the CY 81 fee season and suggestions received from field personnel, a few changes were made to the User Permit (ENG Form 4457 (TEST)) for CY 82 (Figure 6). These changes are listed below with a brief description about the revision:

RENEWAL	This block has been added to help eliminate biases resulting from camping parties that do not register for their entire visit the first day.
VEHICLE(S)	Gate attendants will now record the actual number of each type of vehicle instead of simply indicating that the camping party has that type of vehicle(s). In addition, the "motorhome" category has been moved into the vehicle element to improve equipment summaries and the "motorcycle" category has been added to increase accuracy.
CAMPING EQUIPMENT	The actual number of each type of equipment will be recorded here in the same manner as the vehicle element. The "NONE" category has been added to clarify data summaries.
ELECTRIC HOOKUP	This block was requested by field personnel to provide a check that proper fee was collected. It will also make it easier to determine usage of electrical hookups.
RECREATIONAL EQUIPMENT	The actual number of each type of equipment will be recorded here in the same manner as the vehicle element. Additional "OTHER" categories are included to accommodate groups with more than one "OTHER" type of equipment.

32. Some other minor changes have been made in the form to allow for easier coding and keypunching. These modifications are mainly a reorganization of the data elements in a more logical format and adding a box for coding in the type of Golden Passport used.

 <b>U. S. ARMY—CORPS OF ENGINEERS</b>															<b>SERIAL NUMBER</b> <b>SAMPLE</b>										
<b>USER PERMIT</b>																									
<b>DISTRICT</b>		<b>PROJECT</b>					<b>REC AREA</b>			<b>SITE NUMBER</b>				<b>RENEWAL</b>		<b>CAR LICENSE</b>				<b>ZIP CODE</b>					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	Y	15	STATE	NUMBER	16	17	18	19	20			
<b>NAME OF CAMPER (OPTIONAL)</b>							<b>NUMBER IN PARTY</b>		<b>PRIOR VISITS</b>		<b>PRIMARY DESTINATION</b>		<b>STARTING DATE</b>				<b>ENDING DATE</b>								
							21	22	Y	23	Y	24	MO	DAY	YR	MO	DAY	25	26	27	28	29	30	31	32
<b>VEHICLE(S)</b>							<b>CAMPING EQUIPMENT</b>							<b>RECREATIONAL EQUIPMENT</b>											
33	<input type="checkbox"/> CAR						39	<input type="checkbox"/> TENT							45	<input type="checkbox"/> POWERBOAT									
34	<input type="checkbox"/> TRUCK						40	<input type="checkbox"/> POP-UP TRAILER							46	<input type="checkbox"/> SAILBOAT									
35	<input type="checkbox"/> VAN						41	<input type="checkbox"/> PICKUP CAMPER							47	<input type="checkbox"/> BICYCLE									
36	<input type="checkbox"/> MOTORHOME						42	<input type="checkbox"/> TRAVEL TRAILER							48	<input type="checkbox"/> MOTORCYCLE									
37	<input type="checkbox"/> MOTORCYCLE						43	<input type="checkbox"/> NONE							49	<input type="checkbox"/> ORV (NONMOTORCYCLE)									
38	<input type="checkbox"/> OTHER													50	<input type="checkbox"/> OTHER										
							Y	<b>ELECTRIC HOOKUP</b>							51	<input type="checkbox"/> OTHER									
							44								52	<input type="checkbox"/> OTHER									
<b>1. GOLDEN AGE NO.</b>							<b>NIGHTS PD.</b>		<b>TOTAL FEE PAID</b>				<b>ATTENDANT</b>												
<b>2. GOLDEN ACCESS NO.</b>							53	54	55	\$	56	57	58	59											

ENG FORM 4457(TEST), Feb 82

EDITION OF MAR 81 IS OBSOLETE. (Proponent: DAEN-CWO-R)

FISCAL

Figure 6. ENG Form 4457 (TEST), Feb 1982

#### PART IV: SUMMARY

33. During CY 81, the first full year of data was collected at the 15 projects participating in the CRS. Preliminary analysis of that data indicates its potential usefulness for planning, management, and research purposes.

34. Minor modifications have been made in the data collection instrument for CY 82. These modifications should improve the efficiency of data collection and summarization as well as increase the information available. Additional modifications are not anticipated in the 4457 (TEST) Form at this time.

35. The CRS data collection will again be conducted at the 15 study projects during CY 82. At several of these projects some changes have occurred between CY 81 and CY 82 in the facilities (e.g. increases in the number of campsites with electrical hookups) or services (e.g. closure of some areas). Comparisons of the CY 81 and CY 82 data will enable inferences to be made as to the effects of these management actions on the visiting public (e.g. if there will be a resultant change in visitor characteristics). Collection of the CY 82 data will expand the CRS capability for trend analysis.

Table 1  
General User Characteristics

Project	Recreation* Days	Mean Length of Stay days	Mean Number in Group	Percent Prior Visits	Percent Primary Destination	Percent Golden Age/Access Passport	Number of Permits
Lake Barkley	48,346	2.33	2.87	87.2	94.8	24.7	7,416
Benbrook Lake	20,470	1.96	3.30	82.7	86.8	17.5	3,463
Greers Ferry Lake	154,423	1.80	3.49	78.4	91.4	16.2	25,272
Hartwell Lake	67,902	2.06	4.09	87.7	97.3	28.4	8,050
McNary L&D	18,511	1.55	2.92	52.6	61.9	31.5	4,237
Milford Lake	24,958	1.56	3.75	84.4	93.9	8.3	4,207
New Hogan Lake	35,413	2.20	3.70	68.7	93.0	13.5	4,410
Nolin River Lake	31,070	1.76	3.71	79.6	97.9	5.2	4,724
Lake Osage	40,936	1.68	3.19	67.9	85.0	22.9	7,816
Lake Ouchita	59,451	2.48	4.17	82.8	92.1	6.2	5,805
R. S. Kerr L&D	17,622	1.77	3.74	86.4	95.3	31.0	2,885
Lake Shelbyville	157,524	2.40	3.55	85.0	80.4	12.0	18,974
Shenango River Lake	50,932	2.30	4.15	86.1	97.5	7.3	5,231
Somerville Lake	68,740	1.99	3.90	77.4	89.1	16.0	10,436
West Point Lake	65,049	2.44	3.81	83.1	96.8	19.6	7,278
Nationwide Total	861,347	2.05	3.60	80.0	89.6	16.7	120,204

\* The number of recreation days of use for each project is equal to the sum of the "number in group" times the "length of stay" for each fee receipt from that project. Any receipts which have the "length of stay" or "number in group" missing (zero) would have recorded zero recreation days. Therefore, this measure of recreation days may be low. The extent of this variation depends on the number of missing (zero) elements (missing values were never greater than 4.0 percent for these elements for the individual projects).

Table 2  
Distribution of Vehicle Types (Percent)

	<u>Car</u>	<u>Truck</u>	<u>Van</u>	<u>Motor- home</u>	<u>Other*</u>
Lake Barkley	28.8	47.1	6.7	16.4	0.4
Benbrook Lake	37.4	47.7	8.1	11.7	0.7
Greers Ferry Lake	37.9	42.5	8.1	8.9	1.4
Hartwell Lake	50.8	39.2	8.8	6.6	0.6
McNary L&D	23.1	43.6	6.9	25.6	0.8
Milford Lake	26.3	47.0	9.8	18.6	8.3
New Hogan Lake	28.5	45.4	12.7	11.0	1.7
Nolin River Lake	38.0	37.2	12.8	6.0	0.5
Lake Oahe	24.1	35.7	9.7	25.2	0.6
Lake Ouachita	49.7	41.3	10.9	5.9	1.4
R. S. Kerr L&D	32.3	66.1	6.9	12.5	0.8
Lake Shelbyville	40.5	27.7	11.0	13.3	1.6
Shenango River Lake	44.4	28.4	9.7	11.9	1.6
Somerville Lake	39.4	47.0	9.8	8.8	1.3
West Point Lake	36.6	47.1	10.3	19.9	6.2
Nationwide Total	37.2	40.6	9.5	12.7	1.7

\* The "Other" category includes any mode of transportation that is not listed. This may include such things as bicycle, walking, seaplane, etc.



Table 3  
Distribution of Camping Equipment (Percent)

	<u>Tent</u>	<u>Pop-up Camper</u>	<u>Pickup Camper</u>	<u>Travel Trailer</u>	<u>Motor- home</u>	<u>Power Boat</u>
Lake Barkley	13.5	8.8	16.4	42.7	16.4	41.5
Benbrook Lake	21.1	6.8	14.4	34.1	11.7	14.0
Greers Ferry Lake	45.0	11.0	7.8	21.9	8.9	15.5
Hartwell Lake	42.1	15.6	8.7	17.4	6.6	35.0
McNary L&D	16.6	3.8	10.7	39.4	25.6	2.6
Milford Lake	26.2	7.2	15.2	28.3	18.6	31.9
New Hogan Lake	18.5	1.8	21.3	13.5	11.0	36.2
Nolin River Lake	49.6	8.3	14.9	7.1	6.0	39.7
Lake Oahe	18.7	7.6	17.5	25.7	25.2	39.4
Lake Ouachita	60.0	13.8	11.5	13.7	5.9	42.3
R. S. Kerr L&D	23.8	4.1	28.2	40.6	12.5	44.2
Lake Shelbyville	32.0	10.3	11.2	28.9	13.3	27.4
Shenango River Lake	31.8	13.4	13.4	26.9	11.9	37.9
Somerville Lake	35.3	7.3	8.3	23.4	8.8	37.2
West Point Lake	29.9	16.0	13.5	29.4	19.9	47.9
Nationwide Total	33.8	9.9	12.2	25.4	12.7	30.4

Table 4

## Recreation Days of Use at Fee Campgrounds, Milford Lake

	0-50 Mile Zone				51-100 Mile Zone				Outside 100 Miles			
	Total Rec. Days	No. of Rec. Days	Percent of Total	Partici- pation Rate*	No. of Rec. Days	Percent of Total	Partici- pation Rate*	No. of Rec. Days	Percent of Total	No. of Rec. Days	Percent of Total	
Curtis Creek	5,483	3,304	60.3	17.8	896	16.3	2.2	1,283	23.4			
Farnum Creek	5,878	1,974	33.5	14.4	2,076	35.3	3.6	1,828	31.1			
Rolling Hills	5,891	2,439	41.4	13.1	732	12.4	1.4	2,720	46.2			
School Creek	2,396	1,126	47.0	6.5	304	12.7	0.8	966	40.3			
Timber Creek	5,287	1,189	22.5	8.7	2,897	54.8	5.8	1,201	22.7			

\* Participation Rate = Recreation days per 1,000 population.

APPENDIX A: EXAMPLE OF A RECREATION ANALYSIS  
PROGRAM (RAP) "PROJECT REPORT"

Definitions and descriptions of the abbreviations and terms used in a RAP "Project Report" are listed below:

NO.	Number of receipts (tabulation) on which the item was checked.
ABS PCT (also PCT)	The absolute percent of receipts on which the item was checked. It is the number of receipts on which the item was checked (NO.) divided by the total number of receipts collected (CAMPING PERMITS).
REL PCT	The relative percent of receipts on which the item was checked. It is the number of receipts on which the item was checked (NO.) divided by the total number of receipts collected less the number of receipts with missing data (CAMPING PERMITS - MISSING).
MISSING	Number of receipts on which no information was checked for that category.
CAMPING PERMITS	Total number of receipts collected for that area during the study period.
CAMPING PARTICIPANTS	Sum of number of "people in group" from each receipt.
PERSONS/GROUP, AVG.	Average number of persons per group (party). Both absolute (ABS) and relative (REL) averages are provided. The absolute average is CAMPING PARTICIPANTS divided by CAMPING PERMITS; the relative average excludes those receipts for which "number in group" was not recorded.
DAYS PAID	Sum of "length of stay" from each permit.
LENGTH OF STAY/ GROUP, AVG.	Average length of stay. Again both absolute and relative averages are provided based on total receipts and total receipts less receipts with missing data, respectively.
TOTAL REC. DAYS OF USE	Total recreation days of use. A recreation day of use is defined as a visit by an individual to a recreation area for any portion or all of a 24-hr period. The number of recreation days of use for each receipt is equal to the "number in group" times the "length of stay." These products are summed for all receipts.

**PRIOR VISITS**

Indicates whether or not camping party had been at recreation area before. Counts of YES and NO responses are provided as well as absolute and relative percentages of each.

**PRIMARY DESTINATION**

Indicates whether or not this project is the primary destination of the camping party on this trip. Counts of YES and NO responses are provided as well as absolute and relative percentages of each.

### VARIABLES MONITORED

PRIMARY VEHICLE	NO.	ABS		REL		EQUIPMENT(CAMPING)		NO.		ABS		REL		EQUIPMENT(NON-CAMPING)		NO.		PCT	
		PCT	PCT	PCT	PCT														
CAR	1261	37.4	44.5			TENT	1784	51.1	60.9					PONERBOAT	1605	47.6			
TRUCK	1126	35.4	39.8			POP-UP TRAILER	438	7.1	8.4					SAILBOAT	9	0.3			
RVAN	477	14.2	16.8			PICKUP CAMPER	234	12.9	15.3					BOAT TRAILER	1608	47.7			
OTHER	4	0.1	0.1			TRAVEL TRAILER	261	7.7	9.2					BICYCLE	9	0.2			
WHEEL DR	54	1.6	1.9			MOTORHOME	206	6.1	7.3					MOTORCYCLE	9	0.3			
MISSING	540					MISSING	541							ORV	0	0			
														OTHER	59	1.8			

## USER CHARACTERISTICS

[illegible]

NO. GOLDEN AGE	131
PASSPORTS RECORDED	
TOTAL FEES PAID	\$22126.00

109 PERMITS SHOW \$0.0 FEE) •  
( 4 PERMITS SHOW ZERO NIGHTS IN PARTY)  
( 9 PERMITS SHOW ZERO NIGHTS PAID)

## PRIMARY DESTINATION

YES	REL	NO
ABS	PCT	ABS
97.6	97.9	2.1
		PCT
		2.1
		PCT
		2.1

APPENDIX B: EXAMPLE OF A RECREATION ANALYSIS  
PROGRAM (RAP) "SITE SPECIFIC DATA REPORT"

The information in a "Site Specific Data Report" is the same as that contained in a "Project Report," but summarized by individual campsite. Definitions and abbreviations are the same as for Appendix A.

# SITE SPECIFIC DATA REPORT

PROJECT NO. 15370 REC AREA NO. 5

SITE NO.	TOT DAYS OCCUPIED	NO. OF GROUPS	AVG NO. IN PARTY	TOT REC DAYS (REL PCT)	TENT (PCT)	POP-UP (PCT)	PICK-UP (PCT)	TRAVEL TRAILER (PCT)	MOTORHOME (PCT)
1	50	34	2.8	136 (REL PCT)	35.3 41.4	2.9 3.4	32.4 37.9	14.7 17.2	8.8 10.3
2	46	37	2.8	132	16.2	0.	5 PERMITS SHOW ZERO CAMPING EQUIPMENT		
3	52	42	2.9	143 (REL PCT)	23.8 26.3	0. 0.	61.9 68.4	24.3 9.5	21.6 11.9
4	31	20	2.1	65	15.0	0.	4 PERMITS SHOW ZERO CAMPING EQUIPMENT		
5	68	34	2.9	188 (REL PCT)	11.8 12.9	2.9 3.2	32.4 35.5	30.0 38.7	20.0 17.6
6	141	29	2.2	236	6.9	0.	3 PERMITS SHOW ZERO CAMPING EQUIPMENT		
7	85	26	1.9	145	0.	0.	13.8 58.6	58.6	20.7
8	87	29	2.1	167 (REL PCT)	24.1 25.9	0. 0.	53.8 27.6	46.2 34.5	11.5 17.2
9	121	20	1.4	157	5.0	0.	2 PERMITS SHOW ZERO CAMPING EQUIPMENT		
10	48	27	2.9	149 (REL PCT)	11.1 12.5	0. 0.	63.0 70.8	35.0 4.2	45.0 18.5
11	48	31	2.4	117 (REL PCT)	12.9 14.3	0. 0.	3 PERMITS SHOW ZERO CAMPING EQUIPMENT		
12	49	26	2.7	125	23.1	0.	1 PERMITS SHOW ZERO NIGHTS PAID		
13	14	12	4.1	58 (REL PCT)	41.7 50.0	25.0 30.0	35.9 39.3	16.1 17.9	38.7 42.9
14	42	24	3.3	129 (REL PCT)	27.3	13.6	3 PERMITS SHOW ZERO CAMPING EQUIPMENT		
15	43	18	3.6	176	61.1	0.	34.6 25.0	15.4 8.3	30.8 8.3
16	2	2	1.0	2	50.0	0.	2 PERMITS SHOW ZERO CAMPING EQUIPMENT		
30	1	1	2.0	2	0.	100.0	1 PERMITS SHOW ZERO PEOPLE		
112	1	1	3.0	3	100.0	0.	0.	0.	0.
0	1	1	3.0	3	0.	0.	0.	100.0	0.

FROM 0 TO 3000

\*\*\*\*\*

APPENDIX C: RECREATION AREA AND PROJECT DATA SUMMARIES  
FOR THE 1981 CAMPGROUND RECEIPT STUDY

1. This appendix contains the accumulated data for each recreation area and project within the Campground Receipt Study (CRS). There are two tables for each of the fifteen projects (Tables C1-C30): the first contains general user characteristics and the second indicates the presence of vehicle or equipment type (percentages).

2. Two types of percentages are presented in these tables, relative and absolute. In the general user characteristic percentages, any permits with missing data (i.e. no response) for "prior visits" or "primary destination" were excluded from the calculation (relative percent). Also, in these tables, missing data were not included in the calculations of the "mean length of stay" and "mean number in party." The actual number of missing permits for these two items is disclosed for the project totals so that the extent of variation of the recreation day measure can be determined (see Table 1 of main text). It should be noted that the sum of recreation area totals for "recreation days" and "number of permits" may not equal the project totals. This is a result of missing or miscoded recreation area codes that make it only possible to include the data in the project totals.

3. The percentages indicating the presence of a vehicle or equipment type show the number of permits which had that item divided by the total number of permits (absolute percent).



Table C1  
Lake Barkley User Characteristics

	<u>Canal</u>	<u>Hurricane Creek</u>	<u>Project Totals</u>
Recreation days	31,882	16,464	48,346
Mean length of stay, days	2.47	2.09	2.33*
Mean number in group	2.84	2.93	2.87**
Percent prior visits	85.5	90.0	87.2
Percent primary destination	93.2	97.3	94.8
Percent Golden Age/Access Passports	26.9	20.9	24.7
Number of permits	4,671	2,745	7,416

\* Seventeen permits showed zero nights paid.

\*\* Sixty-two permits showed zero persons in party.

Table C2  
Lake Barkley Vehicle and Equipment Type  
(Absolute Percent)

	<u>Canal</u>	<u>Hurricane Creek</u>	<u>Project Totals</u>
Car	31.6	24.1	28.8
Truck	45.1	50.5	47.1
Van	7.2	6.0	6.7
Other	0.6	0.1	0.4
Tent	9.4	20.5	13.5
Pop-up	8.7	8.8	8.8
Pickup	13.1	21.9	16.4
Travel trailer	52.9	25.1	42.7
Motorhome	14.3	19.9	16.4
Power boat	37.6	48.1	41.5
Sailboat	0.3	0.1	0.2
Boat trailer	29.3	46.6	35.7
Bicycle	13.4	2.5	9.4
Motorcycle	2.2	0.1	1.4
ORV*	1.7	0.0	1.1

\* Off-road vehicle.

Table C3  
Benbrook Lake User Characteristics

	<u>South Holiday</u>	<u>Mustang</u>	<u>Project Totals</u>
Recreation days	12,811	7,628	20,470
Mean length of stay, days	2.11	1.70	1.96*
Mean number in group	3.14	3.56	3.30**
Percent prior visits	85.9	77.5	82.7
Percent primary destination	84.3	91.2	86.8
Percent Golden Age/Access Passports	23.3	8.0	17.5
Number of permits	2,155	1,301	3,463

\* Fourteen permits showed zero nights paid.

\*\* One hundred and one permits showed zero persons in party.

Table C4  
Benbrook Lake Vehicle and Equipment Type  
(Absolute Percent)

	<u>South Holiday</u>	<u>Mustang</u>	<u>Project Totals</u>
Car	34.7	41.7	37.4
Truck	50.2	43.8	47.7
Van	7.5	9.2	8.1
Other	0.4	1.1	0.7
Tent	19.3	24.2	21.1
Pop-up	5.8	8.5	6.8
Pickup	16.2	11.4	14.4
Travel trailer	39.0	26.0	34.1
Motorhome	11.0	12.8	11.7
Power boat	13.0	15.7	14.0
Sailboat	0.3	0.8	0.5
Boat trailer	10.8	5.2	8.7
Bicycle	1.7	0.5	1.3
Motorcycle	2.4	1.1	1.9
ORV	0.1	0.1	0.1

Table C5  
Greers Ferry Lake User Characteristics

	Dam Site	Old Hwy 25	Heber Springs	Cove Creek	Shiloh	Narrows	Devils Fork	Sugar Loaf	Van Buren	Choctaw	JFK	Project Totals
Recreation days	31,454	11,534	15,650	4,923	6,892	17,973	8,420	8,089	2,083	19,762	27,394	154,423
Mean length of stay, days	1.52	1.56	1.76	1.58	1.71	2.18	1.67	1.78	1.79	1.84	2.09	1.80*
Mean number in group	3.78	4.06	3.77	3.80	3.90	2.97	3.80	3.94	3.64	3.39	2.85	3.49**
Percent prior visits	80.4	79.6	91.0	87.9	91.2	78.4	75.7	82.8	53.2	68.9	73.1	78.4
Percent primary destination	96.5	96.4	84.8	97.6	98.4	89.8	94.9	97.9	89.9	73.1	95.3	91.4
Percent Golden Age/Access Passports	2.2	2.6	2.7	4.6	3.8	33.3	5.9	6.5	6.5	21.5	40.8	16.2
Number of permits	5,515	1,778	2,331	844	1,039	2,897	1,318	1,174	309	3,296	4,738	25,272

\* Nineteen permits showed zero nights paid.

\*\* Three hundred nineteen permits showed zero persons in party.

Table C6  
Greers Ferry Lake Vehicle and Equipment Type  
(Absolute Percent)

	Dam Site	Old Hwy 25	Heber Springs	Cove Creek	Shiloh	Narrows	Devils Fork	Sugar Loaf	Van Buren	Choctaw	JFK	Project Totals
Car	56.9	40.9	38.4	42.4	42.0	22.4	40.1	40.5	50.8	26.7	27.7	37.9
Truck	31.7	47.6	42.2	46.0	45.1	48.1	46.3	44.4	33.0	46.1	45.1	42.5
Van	7.7	6.6	12.2	10.5	6.4	8.7	7.1	8.9	11.0	7.1	7.5	8.1
Other	2.3	2.4	0.4	0.4	0.2	0.4	0.4	1.3	0.6	3.5	0.5	1.4
Tent	69.3	61.8	57.9	56.8	61.8	13.2	63.3	57.3	44.0	28.4	21.2	45.0
Pop-up	10.5	13.0	12.7	6.3	12.0	8.0	12.4	14.3	13.6	10.4	11.3	11.0
Pickup	6.6	5.2	5.0	10.1	10.0	6.4	9.5	6.7	10.0	12.8	7.6	7.8
Travel trailer	6.8	9.7	12.4	11.5	12.8	44.9	6.8	10.3	11.3	31.2	39.6	21.9
Motorhome	4.0	3.3	2.8	1.1	2.5	22.3	2.4	4.3	3.6	14.1	13.9	8.9
Power boat	8.8	24.6	16.0	29.0	20.6	18.0	43.8	23.7	2.6	18.1	3.3	15.5
Sailboat	0.2	0.0	0.6	0.6	1.4	0.1	0.3	0.4	0.3	0.1	0.0	0.2
Boat trailer	7.3	24.5	5.3	27.1	5.7	16.9	42.9	20.0	1.3	12.2	2.5	12.2
Bicycle	1.6	2.2	0.6	0.2	1.9	1.9	5.5	5.9	1.3	1.1	2.4	2.0
Motorcycle	1.5	2.2	1.0	0.2	0.1	1.1	1.4	1.2	1.3	0.7	1.1	1.2
ORV	0.1	0.1	0.0	0.0	0.1	0.0	0.2	0.3	0.0	0.0	0.0	0.1

Table C7

Hartwell Lake User Characteristics

	Wetlanders	River Co.	Crescent	Island Point	Spring- field	Cum- branch	Transient Group	Weldon Island	Glenn Perry	Milton	Chandlers Perry	Payson Creek	Asbury	Oconee Point	Twin Lakes	Coonroe Park	Project Totals
Recreation days	12,372	92	5,100	1,566	7,008	557	393	218	731	4,162	2,557	1,515	5,565	10,565	10,884	4,420	67,902
Mean length of stay, days	2.14	1.25	2.06	1.78	1.89	1.62	1.95	1.21	1.47	1.93	1.78	1.98	2.18	2.13	2.22	2.27	2.06*
Mean num- ber in group	3.71	3.75	4.31	3.93	4.33	4.07	9.82	4.56	4.27	3.82	3.66	3.58	4.40	4.28	4.07	4.59	4.09**
Percent prior visits	86.6	50.0	82.5	80.8	90.8	74.7	86.4	71.4	86.1	94.4	84.0	82.8	90.4	94.4	84.2	88.9	87.7
Percent primary desti- nation	94.8	80.0	99.1	97.2	97.4	96.4	100.0	100.0	98.2	99.2	94.7	98.1	99.3	98.8	97.9	95.6	97.3
Percent Golden Age/Access Passports	27.3	0.0	47.8	8.3	51.7	3.6	0.0	0.0	0.0	19.9	20.7	12.0	56.2	18.7	28.1	3.5	28.4
Number of permits	1,567	20	569	217	860	84	22	42	117	523	397	216	589	1,182	1,214	405	8,050

\* Eleven permits showed zero nights paid.

\*\* One hundred forty-two permits showed zero persons in party.

Table C8  
Hartwell Lake Vehicle and Equipment Type  
(Absolute Percent)

	Watsadlers	River		Island Point	Spring-field	Gun-branch	Transient Group	Weldon Island	Ferry Park	Glen		Mill-town	Chandlers Ferry	Paynes Creek	Asbury	Oconee Point	Twin Lakes	Coneross Park	Project Totals
		Ga.	Crescent																
Car	57.3	70.0	43.6	53.0	45.0	67.9	36.4	54.8	57.3	48.6	41.8	42.1	56.7	49.2	53.2	46.4	50.8		
Truck	55.8	20.0	30.1	35.0	30.7	31.0	63.6	40.5	42.7	31.0	44.6	37.5	25.1	39.6	37.0	39.5	39.2		
Van	7.3	0.0	12.8	12.0	4.9	3.6	13.6	16.7	8.5	13.4	17.1	10.2	9.0	7.4	8.0	7.7	8.8		
Other	0.5	20.0	0.2	0.9	0.0	1.2	9.1	2.4	0.9	2.3	0.3	1.4	0.3	0.3	0.4	0.5	0.6		
Tent	26.0	50.0	51.8	65.0	42.4	77.4	63.6	71.4	78.6	35.2	47.6	68.1	50.1	39.3	44.2	35.3	42.1		
Pop-up	14.9	10.0	17.6	8.8	16.9	2.4	18.2	2.4	6.0	11.9	16.4	6.9	14.8	16.2	20.8	16.5	15.6		
Pickup	8.1	10.0	3.3	16.1	4.3	6.0	27.3	7.1	5.1	13.8	8.6	6.5	9.2	12.9	8.2	8.9	8.7		
Travel trailer	30.2	20.0	13.4	2.3	12.6	11.9	31.8	7.1	9.4	19.5	9.8	5.1	12.6	15.5	16.3	22.7	17.4		
Motorhome	10.1	10.0	11.4	1.4	2.9	7.1	22.7	2.4	0.0	17.2	2.5	8.3	10.2	4.0	2.6	1.7	6.6		
Power boat	23.6	5.0	16.7	39.6	28.7	45.2	36.4	54.8	35.9	46.5	44.3	57.4	51.4	43.7	38.6	15.3	35.0		
Sailboat	0.6	5.0	0.9	6.5	1.4	2.4	0.0	2.4	0.9	5.7	0.3	2.3	1.0	0.5	0.5	0.0	1.2		
Boat trailer	23.7	0.0	17.6	40.1	28.0	13.1	4.5	47.6	19.7	50.1	3.3	55.1	50.8	11.6	37.5	27.7	28.1		
Bicycle	6.8	0.0	0.5	1.8	12.4	0.0	9.1	0.0	0.9	8.2	0.8	1.4	9.7	3.5	6.7	0.2	5.6		
Motorcycle	2.6	5.0	0.7	1.4	0.9	1.2	0.0	0.0	1.7	1.1	0.5	0.9	2.9	0.1	1.2	1.0	1.3		
ORV	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.1	0.0	0.2		



Table C9

McNary Lock and Dam User Characteristics

	<u>Hook Park</u>
Recreation days	18,511
Mean length of stay, days	1.55*
Mean number in group	2.92**
Present prior visits	52.6
Percent primary destination	61.9
Percent Golden Age/ Access Passports	31.5
Number of permits	4,237

\* Five permits showed zero nights paid.

\*\* Twenty-eight permits showed zero persons in party.

Table C10

McNary Lock and Dam Vehicle and EquipmentType (Absolute Type)

	<u>Hood Park</u>
Car	23.1
Truck	43.6
Van	6.9
Other	0.8
Tent	16.6
Pop-up	3.8
Pickup	10.7
Travel trailer	39.4
Motorhome	25.6
Power boat	2.6
Sailboat	0.1
Boat trailer	1.6
Bicycle	1.6
Motorcycle	0.9
ORV	0.1

Table C11  
Milford Lake User Characteristics

	<u>Curtis Creek</u>	<u>Farnum Creek</u>	<u>Rolling Hills</u>	<u>School Creek</u>	<u>Timber Creek</u>	<u>Project Totals</u>
Recreation days	5,483	5,878	5,891	2,396	5,296	24,958
Mean length of stay, days	1.66	1.45	1.70	1.37	1.49	1.56*
Mean number in group	3.65	5.59	3.35	3.23	3.41	3.75**
Percent prior visits	90.8	85.6	64.3	97.5	91.4	54.4
Percent primary destination	98.3	98.4	82.9	100.0	95.3	93.9
Percent Golden Age/Access Passports	6.9	6.6	13.6	4.9	6.8	8.3
Number of permits	918	622	1,063	533	1,069	4,207

\* Three permits showed zero nights paid.

\*\* Fifty-nine permits showed zero persons in party.

Table C12  
Milford Lake Vehicle and Equipment Type  
(Absolute Percent)

	<u>Curtis Creek</u>	<u>Farnum Creek</u>	<u>Rolling Hills</u>	<u>School Creek</u>	<u>Timber Creek</u>	<u>Project Totals</u>
Car	21.4	39.5	24.5	17.8	28.7	26.3
Truck	47.8	44.5	44.5	43.2	52.2	47.0
Van	9.3	10.0	13.9	5.6	8.3	9.8
Other	17.3	9.3	0.7	4.9	9.2	8.3
Tent	23.1	38.3	20.9	20.6	30.0	26.2
Pop-up	5.7	7.2	7.0	4.9	9.9	7.2
Pickup	9.9	15.4	12.3	23.3	19.7	15.5
Travel trailer	34.7	20.4	30.8	21.6	28.3	28.3
Motorhome	20.8	15.4	25.9	22.0	9.8	18.6
Power boat	43.7	32.5	26.8	37.1	23.7	31.9
Sailboat	2.2	0.5	1.0	6.8	0.5	1.8
Boat trailer	42.7	13.7	1.6	25.3	9.2	17.3
Bicycle	1.7	0.2	1.8	7.3	1.8	2.2
Motorcycle	3.6	1.4	2.1	8.1	3.7	3.5
ORV	1.1	0.0	0.3	5.4	0.4	1.1

Table C13  
New Hogan Lake User Characteristics

	<u>Acorn</u>
Recreation days	35,413
Mean length of stay, days	2.20*
Mean number in group	3.70**
Present prior visits	68.7
Percent primary destination	93.0
Percent Golden Age/ Access Passports	13.5
Number of permits	4,410

\* Eleven permits showed zero nights paid.

\*\* Thirty-five permits showed zero persons in party.

Table C14  
New Hogan Lake Vehicle and Equipment  
Type (Absolute Type)

	<u>Acorn</u>
Car	28.5
Truck	45.4
Van	12.7
Other	1.7
Tent	18.5
Pop-up	1.8
Pickup	21.3
Travel trailer	13.5
Motorhome	11.0
Power boat	36.2
Sailboat	0.5
Boat trailer	32.4
Bicycle	0.7
Motorcycle	1.3
ORV	0.1

Table C15  
Nolin River Lake User Characteristics

	<u>Wax</u>	<u>Moutardier</u>	<u>Project Totals</u>
Recreation days	9,098	21,972	31,070
Mean length of stay, days	1.73	1.77	1.76*
Mean number in group	3.84	3.66	3.71**
Percent prior visits	75.6	81.2	79.6
Percent primary destination	98.1	97.9	97.9
Percent Golden Age/ Access Passports	8.4	3.9	5.2
Number of permits	1,353	3,371	4,724

\* Fourteen permits showed zero nights paid.

\*\* Nine permits showed zero persons in party.

Table C16  
Nolin River Lake Vehicle and Equipment Type  
(Absolute Percent)

	<u>Wax</u>	<u>Moutardier</u>	<u>Project Totals</u>
Car	39.3	37.4	38.0
Truck	46.5	33.4	37.2
Van	9.6	14.2	12.8
Other	1.4	0.1	0.5
Tent	45.7	51.1	49.6
Pop-up	11.2	7.1	8.3
Pickup	19.9	12.9	14.9
Travel trailer	5.4	7.7	7.1
Motorhome	5.6	6.1	6.0
Power boat	20.0	47.6	39.7
Sailboat	0.1	0.3	0.2
Boat trailer	10.8	47.7	37.1
Bicycle	0.0	0.2	0.1
Motorcycle	0.0	0.3	0.2
ORV	0.0	0.0	0.0

Table C17  
Lake Oahe User Characteristics

	<u>Downstream South</u>	<u>Downstream North</u>	<u>Indian Creek</u>	<u>Indian Memorial</u>	<u>Project Totals</u>
Recreation days	6,356	18,741	9,000	6,511	40,936
Mean length of stay, days	1.75	1.59	1.79	1.73	1.68*
Mean number in group	3.27	3.15	3.23	3.21	3.19**
Percent prior visits	73.2	63.5	69.6	74.3	67.9
Percent primary destination	85.9	82.2	88.1	88.3	85.0
Percent Golden Age/Access Passports	20.8	20.1	24.9	31.4	22.9
Number of permits	1,068	3,916	1,597	1,171	7,816

\* Eighteen permits showed zero nights paid.

\*\* One hundred twenty permits showed zero persons in party.

Table C18  
Lake Oahe Vehicle and Equipment Type  
(Absolute Percent)

	<u>Downstream South</u>	<u>Downstream North</u>	<u>Indian Creek</u>	<u>Indian Memorial</u>	<u>Project Totals</u>
Car	30.0	26.1	22.2	13.6	24.1
Truck	36.3	34.3	37.0	38.3	35.7
Van	10.9	10.0	8.9	9.1	9.7
Other	1.7	0.2	0.8	0.4	0.6
Tent	20.9	20.3	16.8	13.5	18.7
Pop-up	9.0	8.6	6.6	4.6	7.6
Pickup	18.3	17.3	15.6	20.4	17.5
Travel trailer	25.2	21.3	30.6	34.5	25.7
Motorhome	21.6	23.3	29.7	29.5	25.2
Power boat	21.3	30.9	58.4	58.4	39.4
Sailboat	0.2	0.2	0.1	0.1	0.2
Boat trailer	20.1	29.3	55.7	53.5	37.1
Bicycle	6.1	7.0	6.8	9.0	7.0
Motorcycle	2.2	3.7	1.8	1.3	2.7
ORV	0.4	0.1	0.3	0.3	0.2

Table C19  
Lake Ouschita User Characteristics

	Stephens Park	Denby Point	Tompkins Bend	Joplin	Crystal Springs	Brady Mtn.	Project Totals
Recreation days	1,209	6,893	11,919	10,412	11,057	17,830	59,451
Mean length of stay, days	1.96	2.93	2.59	2.67	2.14	2.47	2.48*
Mean number in group	3.85	4.19	4.14	4.12	4.22	4.20	4.17**
Percent prior visits	61.2	91.1	83.5	83.3	84.2	80.4	82.8
Percent primary destination	73.2	96.7	93.0	88.7	93.2	93.7	92.1
Percent Golden Age/Access Passports	2.9	10.5	7.6	3.6	4.0	7.0	6.2
Number of permits	171	563	1,117	941	1,257	1,742	5,805

\* Nineteen permits showed zero night paid.

\*\* One hundred thirty-seven permits showed zero persons in party.



Table C20  
Lake Ouachita Vehicle and Equipment Type  
(Absolute Percent)

	<u>Stephens Park</u>	<u>Denby Point</u>	<u>Tompkins Bend</u>	<u>Joplin</u>	<u>Crystal Springs</u>	<u>Brady Mtn.</u>	<u>Project Totals</u>
Car	50.9	46.5	49.1	47.5	51.4	51.1	49.7
Truck	33.9	49.9	56.2	39.1	35.7	34.9	41.3
Van	12.9	9.6	9.5	12.5	11.7	10.4	10.9
Other	4.1	0.7	0.6	2.0	0.6	2.1	1.4
Tent	55.0	56.7	47.7	68.7	64.7	61.5	60.0
Pop-up	9.9	16.0	16.2	9.8	13.0	14.8	13.8
Pickup	9.4	16.5	19.4	11.7	6.8	8.4	11.5
Travel trailer	9.9	15.8	20.4	11.8	10.3	12.5	13.7
Motorhome	11.7	5.5	8.1	4.6	4.0	6.4	5.9
Power boat	13.5	17.1	68.7	43.7	36.5	40.2	42.3
Sailboat	8.8	48.1	64.1	27.2	9.9	36.2	34.7
Boat trailer	8.8	48.1	64.1	27.2	9.9	36.2	34.7
Bicycle	0.0	3.6	17.7	3.9	2.8	4.5	6.4
Motorcycle	1.8	2.3	3.2	1.5	2.3	1.9	2.2
ORV	0.0	0.0	0.8	0.1	0.0	0.0	0.2

Table C21

Robert S. Kerr Lock and Dam User Characteristics

	Applegate Cove	Short Mtn. Cove	Cowlington Point	Gore Landing	Sallisaw Creek	Keota Landing	Project Totals
Recreation days	6,273	2,697	4,346	2,135	1,448	587	17,622
Mean length of stay, days	2.16	1.43	1.53	2.26	1.41	1.19	1.77*
Mean number in group	3.58	4.23	4.02	2.65	4.01	4.33	3.74**
Percent prior visits	80.7	80.8	93.9	89.9	86.7	87.9	86.4
Percent primary destination	90.6	95.8	98.7	98.8	93.4	94.8	95.3
Percent Golden Age/Access Passports	38.6	22.2	29.0	48.7	6.5	17.8	31.0
Number of permits	816	486	769	413	260	118	2,885

\* Five permits showed zero nights paid.

\*\* Twenty-four permits showed zero persons in party.

Table C22

Robert S. Kerr Lock and Dam Vehicle and Equipment Type  
(Absolute Percent)

	<u>Applegate Cove</u>	<u>Short Mtn. Cove</u>	<u>Cowlington Point</u>	<u>Gore Landing</u>	<u>Sallisaw Creek</u>	<u>Keota Landing</u>	<u>Project Totals</u>
Car	33.6	39.7	35.5	13.1	33.5	38.1	32.3
Truck	57.0	69.1	74.6	63.9	65.4	68.6	66.1
Van	6.1	9.7	7.0	6.8	3.5	9.3	6.9
Other	0.8	0.4	0.4	1.7	1.2	0.8	0.8
Tent	16.5	34.0	22.5	19.9	35.4	30.5	23.8
Pop-up	3.1	4.1	7.4	2.2	1.9	0.8	4.1
Pickup	21.3	24.5	28.9	39.0	35.8	35.6	28.2
Travel trailer	52.8	36.4	45.0	24.7	25.0	33.1	40.6
Motorhome	15.7	7.8	7.9	19.9	13.1	11.9	12.5
Power boat	35.2	29.0	47.9	68.3	54.6	37.3	44.2
Sailboat	0.7	0.2	0.1	0.7	0.8	0.0	0.5
Boat trailer	35.9	28.2	48.5	66.4	53.8	35.6	44.0
Bicycle	3.7	2.5	2.0	0.0	1.2	0.0	2.1
Motorcycle	1.7	2.5	2.0	0.2	1.5	0.8	1.7
ORV	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table C23  
Lake Shelbyville User Characteristics

	Coon Creek	Lone Point	Lithia Springs	"Bo" Wood	Whitley Creek	Project Totals
Recreation days	65,074	4,860	45,733	30,241	10,871	157,524
Mean length of stay, days	2.47	1.82	2.84	2.66	1.85	2.40*
Mean number in group	3.77	4.54	3.47	2.99	3.90	3.55**
Percent prior visits	81.5	91.8	85.7	92.6	77.3	85.0
Percent primary destination	62.0	96.4	87.0	95.9	96.7	80.4
Percent Golden Age/ Access Passports	8.2	1.2	10.5	25.6	4.3	12.0
Number of permits	7,066	569	5,833	3,952	1,506	18,974

\* Ninety-three permits showed zero nights paid.

\*\* Five hundred twenty permits showed zero persons in party.

Table C24  
Lake Shelbyville Vehicle and Equipment Type  
(Absolute Percent)

	<u>Coon Creek</u>	<u>Lone Point</u>	<u>Lithia Springs</u>	<u>"Bo" Wood</u>	<u>Whitley Creek</u>	<u>Project Totals</u>
Car	44.7	50.1	38.4	30.5	51.3	40.5
Truck	27.6	23.4	25.4	30.2	31.7	27.7
Van	11.4	13.5	12.7	7.2	12.2	11.0
Other	0.4	1.6	1.6	3.1	2.9	1.6
Tent	35.7	60.5	31.8	11.6	57.8	32.0
Pop-up	12.0	3.9	13.3	5.4	6.2	10.3
Pickup	11.5	11.2	11.2	10.1	12.7	11.2
Travel trailer	28.7	8.3	22.0	47.4	15.9	28.9
Motorhome	11.8	4.7	14.3	19.1	5.0	13.3
Power boat	35.5	37.4	16.9	20.1	45.8	27.4
Sailboat	0.7	0.7	0.2	0.3	0.8	0.5
Boat trailer	31.3	38.1	15.1	18.9	41.0	24.7
Bicycle	16.2	7.4	4.8	3.9	5.9	9.0
Motorcycle	2.3	0.7	0.8	1.0	1.1	1.4
ORV	0.1	0.0	0.1	0.0	0.1	0.1

Table C25  
Shenango River Lake User Characteristics

	<u>Shenango Recreation Area</u>
Recreation days	50,923
Mean length of stay, days	2.30*
Mean number in group	4.15**
Percent prior visits	86.1
Percent primary destination	97.5
Percent Golden Age/ Access Passports	7.3
Number of permits	5,231

\* Two permits showed zero nights paid.

\*\* Twenty permits showed zero persons in party.

Table C26  
Shenango River Lake Vehicle and Equipment  
Type (Absolute Type)

	<u>Shenango Recreation Area</u>
Car	44.4
Truck	28.4
Van	9.7
Other	1.6
Tent	31.8
Pop-up	13.4
Pickup	13.4
Travel trailer	26.9
Motorhome	11.9
Power boat	37.9
Sailboat	0.5
Boat trailer	36.1
Bicycle	48.5
Motorcycle	1.3
ORV	0.4

Table C27  
Somerville Lake User Characteristics

	<u>Big Creek</u>	<u>Rocky Creek</u>	<u>Yegna Creek</u>	<u>Project Totals</u>
Recreation days	9,129	33,140	26,465	68,740
Mean length of stay, days	1.76	1.89	2.23	1.99*
Mean number in group	3.56	4.08	3.80	3.90**
Percent prior visits	70.7	77.8	79.9	77.4
Percent primary destination	87.8	91.2	86.7	89.1
Percent Golden Age/Access Passports	2.0	16.2	21.8	16.0
Number of permits	1,639	5,102	3,694	10,436

\* Three hundred eighty-one permits showed zero nights paid.

\*\* Four hundred sixteen permits showed zero persons in party.



Table C28  
Somerville Lake Vehicle and Equipment Type  
(Absolute Percent)

	<u>Big Creek</u>	<u>Rocky Creek</u>	<u>Yegna Creek</u>	<u>Project Totals</u>
Car	44.3	39.4	37.4	39.4
Truck	42.3	46.1	50.4	47.0
Van	9.1	9.5	10.6	9.8
Other	0.5	0.7	2.4	1.3
Tent	57.2	36.5	23.9	35.3
Pop-up	6.4	7.5	7.5	7.3
Pickup	9.2	8.7	7.5	8.3
Travel trailer	7.9	20.0	35.0	23.4
Motorhome	3.7	8.2	11.9	8.8
Power boat	15.4	41.2	41.3	37.2
Sailboat	2.1	2.0	2.0	2.0
Boat trailer	12.7	40.4	37.4	35.0
Bicycle	0.1	4.6	3.6	3.5
Motorcycle	0.8	1.1	1.6	1.2
ORV	0.0	0.2	0.1	0.1

Table C29

West Point Lake User Characteristics

	R. Shaefer Heard	Bird Creek	Brush Creek	Autry Park	Holiday Park	State		Project Totals
						Line Park	Amity Park	
Recreation days	10,564	1,099	1,048	1,658	23,486	6,332	20,777	65,049
Mean length of stay, days	2.37	1.63	2.49	1.73	2.31	2.30	2.79	2.44*
Mean number in group	3.56	3.74	3.36	3.86	4.32	4.30	3.28	3.81**
Percent prior visits	78.4	62.4	63.1	73.8	87.9	76.6	86.1	83.1
Percent primary destination	94.4	94.7	99.2	96.1	97.3	93.1	98.7	96.8
Percent Golden Age/Access Passports	26.5	5.7	19.7	2.3	15.7	7.2	27.1	19.6
Number of permits	1,247	174	132	256	2,423	670	2,367	7,278

\* Eleven permits showed zero nights paid.

\*\* Forty-four permits showed zero persons in party.

Table C30  
West Point Lake Vehicle and Equipment Type  
(Absolute Percent)

	<u>R. Shaefer Heard</u>	<u>Bird Creek</u>	<u>Brush Creek</u>	<u>Autry Park</u>	<u>Holiday Park</u>	<u>State Line Park</u>	<u>Amity Park</u>	<u>Project Totals</u>
Car	41.5	52.9	22.0	42.6	36.7	42.7	31.1	36.6
Truck	42.1	36.8	48.5	43.0	49.1	49.9	48.0	47.1
Van	11.1	12.1	3.8	11.3	12.3	9.1	8.4	10.3
Other	7.1	1.7	9.1	3.9	5.7	8.4	6.1	6.2
Tent	29.4	58.0	30.3	52.3	32.1	33.9	22.0	29.9
Pop-up	10.7	10.3	10.6	5.9	9.5	8.8	9.4	16.0
Pickup	9.6	7.5	17.4	17.2	14.4	26.3	10.9	13.5
Travel trailer	34.0	2.3	28.8	9.4	27.6	19.9	36.0	29.4
Motorhome	19.3	13.8	17.4	12.9	20.9	19.4	20.8	19.9
Power boat	39.5	33.9	2.3	54.7	59.3	50.1	42.9	47.9
Sailboat	1.2	0.0	0.0	0.8	0.4	1.3	0.6	0.7
Boat trailer	35.0	36.2	0.0	2.7	54.9	40.9	39.4	41.8
Bicycle	11.5	2.3	0.0	0.0	14.2	3.3	10.5	10.5
Motorcycle	3.1	2.3	0.0	0.0	6.6	1.5	2.3	3.4
ORV	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.1

APPENDIX D: RECREATION ANALYSIS PROGRAM BY  
COUNTY (RAPCO) FOR ONE RECREATION AREA

The following are definitions and descriptions of the abbreviations and terms used in a RAPCO recreation area report.

STATE COUNTY	STATE is a two-digit code to identify state of origin, and COUNTY is a three-digit code to identify county of origin. The county code of 000 indicates that only the state of origin was identified because it was outside the measured distance. A state and county code of 99999 indicates those user permits with incomplete or missing zip codes and therefore no origin could be identified.
MILES	An estimate of the road mileage between the population center of the county and the recreation area. The mileage code of 999 indicates states or counties which are outside the measured distance (in this example it is 100 miles).
POPULAT	The population of the county identified based on the 1980 Census.
RECEIPT	The number of user permits issued to visitors from each county (or state) of origin.
RCT/THO	The number of receipts per thousand population (RECEIPT/(POPULAT/1000)).
RECDAYS	Recreation days of use. A recreation day of use is defined as a visit by an individual to a recreation area for any portion or all of a 24-hr period. The number of recreation days of use for each receipt is equal to the "number in group" times the "length of stay." These products are summed for all receipts.
REC/THO	The number of recreation days of use per thousand population (RECDAYS/(POPULAT/1000)).
AVEPERS	The mean number of persons per receipt.
AVESTAY	The mean length of stay.
PREVIST	Previous visits. Indicates whether or not camping party had been at project before.
PRIDEST	Indicates whether this project was the <u>primary destination</u> of the camping party or if it will serve only as a stop-over during a trip to another destination.

The remainder of the abbreviations and terms are for the equipment types brought to the areas by the camping party. These can be identified by referencing a RAP report (Appendix A) or a FORM 4457 (TEST) (Figure 1 in main text).

PROJECT: 11140 AREA: 9 DATE: 12/14/81 PAGE: 1

C	S	O	N	P	R	E	C	R	R	E	R	A	A	P	P	P	PRIMARY	VEHICLE	CAMPING	EQUIPMENT	NONCAMPING	EQUIPMENT
202031	24	29532	7	20234	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202032	25	29533	8	20235	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202033	26	29534	9	20236	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202034	27	29535	10	20237	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202035	28	29536	11	20238	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202036	29	29537	12	20239	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202037	30	29538	13	20240	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202038	31	29539	14	20241	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202039	32	29540	15	20242	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202040	33	29541	16	20243	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202041	34	29542	17	20244	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202042	35	29543	18	20245	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202043	36	29544	19	20246	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202044	37	29545	20	20247	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202045	38	29546	21	20248	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202046	39	29547	22	20249	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202047	40	29548	23	20250	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202048	41	29549	24	20251	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202049	42	29550	25	20252	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202050	43	29551	26	20253	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202051	44	29552	27	20254	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202052	45	29553	28	20255	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202053	46	29554	29	20256	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202054	47	29555	30	20257	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202055	48	29556	31	20258	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202056	49	29557	32	20259	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202057	50	29558	33	20260	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202058	51	29559	34	20261	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202059	52	29560	35	20262	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202060	53	29561	36	20263	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202061	54	29562	37	20264	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202062	55	29563	38	20265	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202063	56	29564	39	20266	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202064	57	29565	40	20267	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202065	58	29566	41	20268	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202066	59	29567	42	20269	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202067	60	29568	43	20270	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202068	61	29569	44	20271	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202069	62	29570	45	20272	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202070	63	29571	46	20273	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202071	64	29572	47	20274	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202072	65	29573	48	20275	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202073	66	29574	49	20276	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202074	67	29575	50	20277	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202075	68	29576	51	20278	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202076	69	29577	52	20279	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202077	70	29578	53	20280	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202078	71	29579	54	20281	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202079	72	29580	55	20282	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202080	73	29581	56	20283	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202081	74	29582	57	20284	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202082	75	29583	58	20285	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202083	76	29584	59	20286	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202084	77	29585	60	20287	2.9	1.4	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
202085	78	29586	61	20288	2.9	1.4	100.0	100.0	100.0	100.0												

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Curtis, Gregory L.

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56 p. in various pagings : ill. ; 27 cm. -- (Miscellaneous paper ; R-82-3)

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